Programme Specification

Programme Summary Information				
1	**Programme Title**		MSc Financial Technology and Trading	
2	**University of Sunderland Course Code**		**UCAS Code**	
3	**Awarding Institution**		University of Sunderland	
4	**Teaching Institution(s)** (if different from point 3)		University of Sunderland in London	
5	**Professional Statutory or Regulatory Body (PSRB)** (if applicable)		N/A	

6	**Programme Description**
	Overview This one-year master's degree programme is designed to enable students to develop their careers in financial technology and modern systems of financial trading with an emphasis on hands-on experience. This degree will develop students' awareness and knowledge of practical trading systems and cutting-edge financial technologies. Overall, this postgraduate degree programme is aimed at helping students to become competent managers and practitioners in a range of organisations operating within the financial services industry. The programme is modular in design and covers key areas of modern systems of financial trading and financial technologies such as blockchain, artificial intelligence and machine learning within a balanced curriculum. The programme will enhance the participant's knowledge, develop their technical skills and potential and provide an environment where students can learn collaboratively in addition to teaching staff. It is designed to develop a range of technical, conceptual and analytical skills to address a variety of real-world finance problems by applying artificial intelligence and machine learning methods, tools, and techniques in financial services. Students will also develop the technical and innovative skills required to navigate the complex and dynamic world of financial markets and to design, structure, and build relevant, accurate and readily understandable financial models. **What's covered in the course?** The MSc Financial Technology and Trading programme covers key areas of modern systems of financial trading and financial technologies such as blockchain, artificial intelligence and machine learning and an understanding of how these technologies can be leveraged to design and deliver innovative products and services within the financial services industry. Students will learn how to code and develop programming skills using R and Python programming languages to create innovative financial products and services. The programme also covers the modelling

issues that are relevant to facilitate the construction of robust financial models including Excel functions and building Visual Basic for Applications (VBA).

The MSc Financial Technology and Trading modules include **Financial Modelling and Design** which will explore how to design, structure and build relevant, accurate financial models. Emphasis will be placed on the modelling of financial statements, cash flow valuation, risk analysis, options, and real options.

The second module; **Programming for Financial Products and Services** is designed to develop coding and programming skills using R and Python programming languages to produce innovative financial products and services. The module serves as an advanced platform to help write programming functions in Python and R and process data files including reading, modifying, and writing data to external files. Overall, the module aims to equip students with the programming skills required to produce simple R and Python applications to solve real-world financial problems.

Blockchain and Distributed Ledger Technology is the third module and focuses on the concepts of blockchain and distributed ledger technologies and the opportunities these technologies offer in the financial services industry. The module will explore how blockchain and distributed ledger technology can be leveraged in payments, insurance, lending, fundraising, settlement of securities transactions and contract execution. Students will also develop a deeper awareness of cryptocurrencies and a robust understanding of the technology underlying Bitcoin and other cryptocurrencies.

The fourth module; **Artificial Intelligence and Machine Learning Technologies** will provide students with the ability to evaluate and apply Artificial Intelligence and Machine Learning methods, tools, and techniques in financial services. Students will gain knowledge and understanding of modern machine learning for financial services and neural network libraries with hands-on activities. Students will also learn how to create appropriate machine-learning methods for supervised and unsupervised financial services problems.

The fifth module is **Financial Markets and Trading**. This module will ensure students develop a critical understanding of the complex and dynamic world of financial markets. This module provides students with the opportunity to gain the appropriate knowledge and skills required to effectively navigate financial markets. Students will use the Bloomberg Terminal functionality to navigate the platform and find market-moving data. Students will also develop a deeper understanding of the regulatory framework governing financial markets and the risk management strategies in financial trading.

The final module: **Research Project** will help students develop analytical, evaluative, and problem-solving skills through an investigation of the challenges facing financial services companies and provide specific recommendations and solutions that add strategic value to a financial institution or the financial services industry. Students will be expected to use appropriate research methods, data collection, and analysis methodologies appropriate to their identified issues. All modules on the programme are core, there are however many opportunities for students to contextualise the teaching and learning activities and in this module, students will be required to identify fintech opportunities or challenges within their current company or sector and be required to present their research findings to their employer or sector experts to

	enhance employability opportunities. There will also be opportunities to gain knowledge and experience from working with students from the MBA and MBM programmes, MSc finance and management and MSc international business management. This is one of the key attractions of this programme, sharing and gaining knowledge from other students and student experience. **Where will I study?** Students who enrolled on the MSc Financial Technology and Trading will be studying at the University of Sunderland in London. Teaching will be face-to-face and will be provided access to a "Trading Room" environment where they will use the Bloomberg Terminal functionality to find market-moving data to provide a hands-on experience of modern systems of financial trading thereby enhancing their employability. **Does the programme have an associated IFY?** No

7	**Programme Awards**		
7a	**Name of Final Award**	**Level**	**Credits Awarded**
	Master of Science in Financial Technology and Trading	7	180
7b	**Exit Awards and Credit Awarded**		
	Postgraduate Certificate in Financial Technology and Trading	7	60
	Postgraduate Diploma in Financial Technology and Trading	7	120

8	**Programme Specific Regulations**
	No

9a

Mode(s) of Study	**Location/Campus**	**Duration of Study**
Full time	London	1 year
Part time	London	2 years
Apprenticeship	N/A	N/A

9b

Is this programme delivered by a Transnational (TNE) partner?	No
Is this programme delivered at UK Further Education Colleges?	No

10	**Entry Requirements**
	The admission requirements for this programme as stated on the course page of the University of Sunderland website at https://www.sunderland.ac.uk/, or found by searching for the course entry profile located on the UCAS website are correct. YES This programme is suitable for students with advanced standing (eg APL) YES Where applicable use the space below to detail any specific arrangements – eg APL only permitted to a specific level Accreditation of Prior Learning (APL)

11	**Programme Learning Outcomes**
	By the end of the programme, successful students will be able to do the following:
1	Discuss the various types of financial markets, critically evaluate alternative investment vehicles and their role in financial markets and develop robust awareness of financial technology and innovative skills related to the financial services industry.
2	Critically examine current issues and the development of financial applications and systems.
3	Evaluate and manage technical and financial risks and uncertainty associated with financial technology-based applications and markets.
4	Design, build, adapt and critically evaluate financial technology systems, applications, and software to solve supervised and unsupervised financial services problems.
5	Use appropriate technology including software to develop financial models and systems which are scalable for future applications
6	Design and build new financial technology platforms that can handle real-time big data to solve real-world financial problems.
7	Critically evaluate existing literature, current developments and challenges faced by financial institutions or the financial services industry which require a justifiable and substantial level of structured research activity and devise a justified research methodology.

12. Programme Requirements
There are optional modules on this programme No

Level 7:

In order to complete this programme a student must successfully complete all the following CORE modules (totalling* 180 *credits):

Module Code	Module Name	Credit Value	PLO(s) assessed
PGF01	Financial Modelling and Design	**30**	**PLO4, PLO5**
PGF02	Programming for Financial Products and Services	**30**	**PLO04, PLO2, PLO5, PLO6**
PGF03	Blockchain and Distributed Ledger Technology	**30**	**PLO1, PLO02, PLO3, PLO4, PLO5, PLO6**
PGF04	Artificial Intelligence and Machine Learning Technologies	**30**	**PLO1, PLO02, PLO3, PLO4, PLO5, PLO6**
PGF05	Financial Markets and Trading	**30**	**PLO1, PLO2, PLO3**
PGF06	Research Project	**30**	**PLO7**

13. Employability

Professional	Students will develop the '**professional'** graduate attribute by gaining knowledge and in-depth comprehension of the complex and dynamic world of financial markets and cutting-edge financial technologies for developing innovative financial products and services. Students will also develop professional attributes through engaging in critical reflection of their practice, demonstrating professional standards in behaviour, engaging others and ongoing professional and academic development as well as advocating the

	use of professional practices within organisations in the financial services industry. Students will be encouraged to develop high levels of self-awareness, emotional and social intelligence. Gaining knowledge and skills to engage with a range of stakeholders and working collaboratively with others within the financial services industry is a feature of modules across the programme. Modules which contribute significantly to the development of this graduate attribute include but are not limited to: • Financial Modelling and Design • Programming for Financial Products and Services • Blockchain and Distributed Ledger Technology • Artificial Intelligence and Machine Learning Technologies • Financial Markets and Trading
Adaptable	The **'adaptable'** graduate attribute will be developed through student engagement with the content learning and assessment outcomes of the modules that form the programme consisting of Financial Modelling and Design, Programming for Financial Products and Services, Blockchain and Distributed Ledger Technology, Artificial Intelligence and Machine Learning Technologies and Financial Markets and Trading. This will include developing knowledge and skills relating to initiating and leading the introduction of new and innovative products within the financial services sector, creating an environment for innovation and creativity, establishing the value of ideas and change initiatives and driving continuous improvement. Student learning will encourage them to challenge the use of outdated technologies and systems and propose more innovative and cutting-edge approaches for sustainable business continuity within the financial services industry. The modules on the programme significantly focus on problem solving and innovation, whilst managing complexity and ambiguity in uncertain and diverse contexts.
Engaged	The **'engaged'** graduate attribute will be developed and achieved through the learning and assessment outcomes across a range of modules noted below. This will involve students demonstrating they can manage complex relationships across multiple and diverse stakeholders both internally within the organisational context and in the wider external environment. Key to this attribute will be the demonstration of challenging and developing strategies and financial applications that are underpinned by inclusivity, valuing diversity, enabling cultural inclusion, ethics, responsibility, and sustainability. Modules which contribute significantly to the development of this graduate attribute include but are not limited to: • Financial Modelling and Design • Programming for Financial Products and Services • Blockchain and Distributed Ledger Technology • Artificial Intelligence and Machine Learning Technologies

	• Financial Markets and Trading • Research Project

14. Additional Costs: Are there any additional costs on top of the fees?

List any additional costs the students will have to meet and whether this is optional (eg an optional field trip) or essential (eg buying a lab coat). Give an estimation of the approximate cost which may be a range. This information should be replicated in the Module Guide and will be published on the course page. Please note for Apprenticeships, there should be no additional costs to students.

No, but all students buy some study materials such as books and provide their own basic study materials	X
Yes (optional). All students buy some study materials such as books and provide their own basic study materials. In addition, there are some additional costs for optional activities associated with the programme (see above)	
Yes (essential). All students buy some study materials such as books and provide their own basic study materials. In addition, there are some essential additional costs associated with the programme (see above)	

15. Version Control
Programme Specifications are checked annually and updated when changes are made to the programme.

Version Number		**Date**	**Details of change**	**Author**
V1	**Document created**	**03/05/24**	**New programme created**	**Y Alhassan**
V2	**Document changed**			

Version number:	3	Template owner:	Quality Support
Date reviewed:	Nov-22	Date of next review:	Nov-27